

Nursing teaching strategies to incorporate ambulances in emergencies (1907-1928)

Estratégias do ensino de enfermagem para a inserção da ambulância nas situações de urgência (1907-1928)

Estrategias de enseñanza de enfermería para incluir ambulancias en situaciones de emergencia (1907-1928)

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ABSTRACT

Objective: to analytically describe the strategies adopted by Nursing teaching promoters to incorporate ambulances in emergencies. **Method:** A historical study based on micro-analysis, through the Evidentiary Paradigm method. The materials used were books and newspapers published between 1907 (year when Adolpho Possollo's *Relatório de Viagem à Europa* was published) and 1928 (publication of *Livro do Enfermeiro e Enfermeira* by Getúlio dos Santos). **Results:** seven documents addressing pre-hospital care were found, in addition to newspaper clippings from the period under study that show the effectiveness of the services provided by ambulances. **Final considerations:** along with Nursing teaching for pre-hospital assistance, the strategy used to create an emergency care culture was to buy ambulances.

Descriptors: Nursing; Emergencies; Ambulances; History; Teaching.

RESUMO

Objetivo: descrever, analiticamente, as estratégias empreendidas dos incentivadores do ensino de enfermagem para a inserção da ambulância nas situações de urgência. **Método:** estudo histórico com base na microanálise, pelo método do paradigma indiciário. Foram utilizados livros e jornais publicados entre 1907, ano de publicação do relatório de viagem à Europa de Adolpho Possollo e 1928, publicação da obra *Livro do Enfermeiro e Enfermeira* de Getúlio dos Santos. **Resultados:** foram encontradas sete obras que trata do atendimento pré-hospitalar juntamente com recortes dos jornais da época estudada que mostram a efetividade dos serviços realizados pelas ambulâncias. **Considerações finais:** a aquisição de ambulâncias juntamente com o ensino de enfermagem para o atendimento pré-hospitalar foi a estratégia utilizada para a criação da cultura dos cuidados em emergência.

Descritores: Enfermagem; Emergências; Ambulâncias; História; Ensino.

RESUMEN

Objetivo: describir analíticamente las estrategias adoptadas por los promotores de la enseñanza de enfermería para incluir ambulancias en situaciones de emergencia. **Método:** estudio histórico basado en el microanálisis, mediante el método del paradigma indiciario. Se utilizaron libros y periódicos publicados entre 1907 (año de publicación del *Relatório de Viagem à Europa* de Adolpho Possollo) y 1928 (año de publicación del *Livro do Enfermeiro e Enfermeira* de Getúlio dos Santos). **Resultados:** se encontraron siete trabajos que abordan la atención prehospitalaria, además de recortes de periódicos del período estudiado que demuestran la efectividad de los servicios prestados por las ambulancias. **Consideraciones finales:** la adquisición de ambulancias junto con la enseñanza de enfermería para la atención prehospitalaria fue la estrategia utilizada para crear una cultura de cuidados de emergencias.

Descriptores: Enfermería; Urgencias Médicas; Ambulancias; Historia; Enseñanza.

INTRODUCTION

Vehicles were first used in care during the Napoleonic Wars (1792-1802). They were employed to carry the wounded to areas far from conflicts by means of animal draught¹. In 1792, surgeon Dominique-Jean Larrey (the father of Military Medicine) started providing assistance in battle fields by means of “flying” ambulances with the objective of reducing times and ensuring that First Aid was applied². The term “ambulance” comes from French: *ambulance*. This means they were vehicles that rode along the troops, and “flying” for being light and fast³.

Cars arrived at Rio de Janeiro in 1895. The first model was the Serpollet and was introduced by José do Patrocínio, an abolitionist politician. This was the milestone for the development of transportation means, formerly animal draught. However, the streets were not suitable, which used to cause accidents; even Patrocínio and Olavo Bilac (Parnasian poet) crashed into a tree and suffered minor wounds⁴.

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In Brazil, the history of pre-hospital assistance dates back to the pre-hospital care records from 1889. It was implemented through animal draught services by the Fire Brigade⁵. In 1920, Adolpho Possollo (military doctor and of the Rivadávia Correa Outpatient Service) published "*Curso de Enfermeiros*", presenting diverse evidence of a change in the care culture for the emergency care to be provided to victims in public roads or similar situations, using ambulances to take them to a hospital⁶.

We emphasize that as care culture we consider all the mechanisms that convey information and its respective ways of doing. According to this line of thought, the result are historic and demographic factors. They are the cornerstones of the meanings centered on health, disease and real-life situations⁷. Therefore, we consider that they drive care culturalization.

We believe that the progress in terms of transportation that favored the transition from animal draught to combustion engines changed the concept of caring for victims in public roads and similar situations, as well as health policies and Nursing teaching.

Consequently, we set ourselves the following objective: To analytically describe the strategies adopted by government officers and Nursing teaching promoters to incorporate ambulances in the care culture for emergencies.

METHOD

A historical study using micro-analysis⁸ (mainly documentary) from the Evidentiary Paradigm perspective. This model specializes in the clues left (sometimes rarely important or trivial and perhaps ignored) which, through analyses, comparisons and classifications, reveal the symptoms that uncover the path of the phenomenon under study through the analysis, in addition to removing characters from anonymity⁹.

The documents (written materials and images) come from the National Library Digital Archive, the University of São Paulo Nursing School Library, the *Enfermeira Maria de Castro Pamphiro* Sector Files, the Alfredo Pinto Nursing School and the Brazilian Red Cross (central body).

To this purpose, the search started with Adolpho Possollo's work - *Curso de Enfermeiros* (1920)⁶ - which contained clues regarding books, articles and images. This led us to delimit the search between 1907, starting with *Relatório de Viagem à Europa*, and ending with the work by Getúlio dos Santos from 1928 entitled *Livro do Enfermeiro e Enfermeira: para uso dos que se destinam à profissão de enfermagem e das pessoas que cuidam de doentes*¹⁰; as well as to geographically circumscribe it to Rio de Janeiro, former capital city of the country, or *Distrito Federal* (1763-1960).

When accessing the documents, the criterion adopted was to search records about ambulances, public health policies and Nursing teaching on care for emergency assistance, thus comprising the analysis *corpus*.

By resorting to the documentary *corpus*, the text materials were cross-linked subjecting the images to a Semiotics-based analysis matrix through the following items: data identification, content plan, expression plan and complementary data to analyze¹¹. This implied source triangulation¹², which gave rise to a discussion in the form of a historical narrative with detailed literature and theoretical aspects about the care culture.

As the sources were in the public domain and dated over 70 years old, the study was not submitted to any Research Ethics Committee.

RESULTS AND DISCUSSION

As methodologically foreseen, we will present the analysis *corpus* results corresponding to the works consulted (published between 1907 and 1928) in Figure 1.

1907 – “Relatório de Viagem á Europa”, by Adolpho Possollo

Report developed thanks to a grant from the Rio de Janeiro Trade Association. In his trip to Paris, England, Germany and North America, the author visited several health institutions and had the opportunity to access the care provided to wounded people in public roads and assisted by ambulances.

1907 – “Transporte de Doentes: principalmente feridos”, by Adolpho Possollo

Article published in the Brazil-Médico Journal. It reflected the concern for the transportation of sick individuals, especially wounded people. They were victims of diseases or accidents requiring transportation from their bed or public roads to hospital beds or operating rooms. In addition, the necessary elements to install the due equipment in an ambulance were highlighted. Transportation of patients with heart diseases, tuberculosis, jaundice, smallpox, mental diseases, anger delirium and wounded in battlefields was excluded.

1915 – “Lições do curso prático para as Damas Enfermeiras Voluntárias, de acordo com o programa aprovado. II Volume”, by the Brazilian Red Cross

Book with notes to teach Female Nurse Volunteers to provide care.

1917 – “Jornal O Paiz” and “Correio da Manhã”

Announcement for the Stretcher-bearer course that would be launched, with its requirements and class times. It is also advised that the Voluntary Nurses course would not cease for the holidays so as not to interrupt the teaching process.

1917 – “Quadro do Curso Prático de Enfermeiros e Padioleiros – Enfermeirandos de 1917”, no author.

A single image with 8 subjects in individual photographs and another 1 along with date information and identification data corresponding to those in the picture.

1918 – “O Paiz”

Announcement informing that the Brazilian Red Cross president had sent a letter requesting support to the Rio Grande do Sul Military Brigade Commander to create a Stretcher-bearer course.

1920 – “Curso de Enfermeiros”, by Adolpho Possollo

The book contained many texts and images, with the objective of providing professional information to nurses working in civilian/military hospitals and hospices. The content presented aspect related to the care provided to patients that needed to be transported in ambulances.

1922 – “A Assistência Pública e Privada no Rio de Janeiro: história e estatística: comemoração do Centenário da Independência Nacional”, by Ataulfo Nápoles de Paiva

Book mainly based on historical and statistical data. It presented data from the health institutions they provided services to. It also included pictures of the ambulance fleet working with their respective health personnel.

1923 – “Histórico da Cruz Vermelha Brasileira”, by the Brazilian Red Cross

The work reported the institution's history with its milestones. It encompassed financial aspects, agreements and the work performed by the nurses from the Practical Nursing School.

1923 – “Livro do Enfermeiro e da Enfermeira: para uso dos que se destinam à profissão de enfermagem e das pessoas que cuidam de doentes”, by Getúlio dos Santos

This work was targeted at nurses, as well as to care providers in general. Among different aspects, it taught maneuvers for the care to be provided to patients that needed to be transported in ambulances.

Figure 1: Documentary corpus (1907-1928). Rio de Janeiro, RJ, Brazil, 2023.

The health field was successively called as follows during the 1907-1928 period: Public Health General Office (1897-1920), by unifying the General Port Health General Inspection Office and the Federal Health Institute through Decree No. 2,449 of February 1st, 1897, and National Public Health Department, enacted by Decree No. 3,987 of January 2nd, 1920; both subordinated to the Ministry of Justice and Internal Affairs¹³.

In the Brazilian context, Rio de Janeiro has experienced several health adversities, such as the Vaccination Rebellion (1904) and the Spanish Flu (1918). However, it is worth recalling other problems like tuberculosis, which contributed as an argument of the Health Reform led by Carlos Chagas (1879-1934) to create the National Public Health Department¹⁴.

In 1904, Possollo went to Europe and North America; upon returning, he published the report entitled *Uma Viagem á Europa* (1907), presenting how the services for the transportation of victims/wounded people worked in France, Germany and North America; this report was made possible thanks to a grant from the Rio de Janeiro Trade Association¹⁵.

When he came back from Europe (1905), Possollo presented it at the 3rd Latin American Scientific Congress held in Rio de Janeiro; two years later, the material was published in the Brazil-Médico journal, under the title of *Transporte de Doentes, principalmente feridos*.

The 3rd Latin American Scientific Congress lasted from August 6th to August 16th, 1905, and enjoyed international projection; its purpose was to socialize and strengthen the field in eight sections (with Medical/Surgical Sciences and Public Medicine among them) to confer visibility to Brazil¹⁶.

It was attended by 697 participants, with 474 Brazilians such as the Río Branco Baron and Joaquim Nabuco, in addition to rulers from Latin American republics¹⁷.

The article highlights the concern for transportation, mainly in ambulances, targeted at those with some health problem or who were victims of public road accidents. It also presented its readers a detailed description of the elements that should be included inside the vehicle. However, it mentioned that people with heart problems, tuberculosis, jaundice, smallpox, mental diseases, anger delirium and wounded in armed conflicts should be excluded due to their specificities¹⁸.

In this context, the Assistance Hub located in *Rua do Camerino* (unnumbered) created the first emergency care post through Decree No. 673 of October 31st, 1907, which was implemented on November 1st, 1907. It was considered a success due to the transportation need in emergency situations¹⁹.

The Public and Private Assistance Congress was held in *Distrito Federal* one year after the Assistance Hub had been established. The following topics were dealt with: assistance to patients/victims at their homes and on public roads under responsibility of the City Hall; creation of a public service institution in areas with industrial activity; turning the Assistance Hub into the model to follow; and creation of Federal Health Districts for the care to be provided¹⁹.

Three years after the Assistance Hub was created, it required expansion. This implied moving the facilities to a building in *Plaza de la República* with deserved recognition, ratified in 1911 and 1912, when the International Hygiene Exhibition in Dresde, Germany, and subsequently in Rome, respectively, was awarded the Gold Medal for the services provided¹⁹.

As we can see, the service offered by the Assistance Hub was in fact an ambulance-based emergency care model. This means that it was one of the guiding beacons for the public health policies in *Distrito Federal*, focused on urgent care by means of ambulances.

In order to better understand the number of services provided with ambulances during the 1907-1911 period: 18,901 departure records for urgent care on public roads; 7,734 for home visits; 6,112 to Police stations; and 6,561 to different locations. As for the patient transportation records, 5,349 corresponded to *Santa Casa da Misericórdia*, 1,163 to private homes, 228 to military hospitals and 94 to private hospitals¹⁹.

In addition, the work entitled *Assistência Pública e Privada no Rio de Janeiro: história e estatística* shows a fleet with at least 11 ambulances, as can be seen in Figure 2.

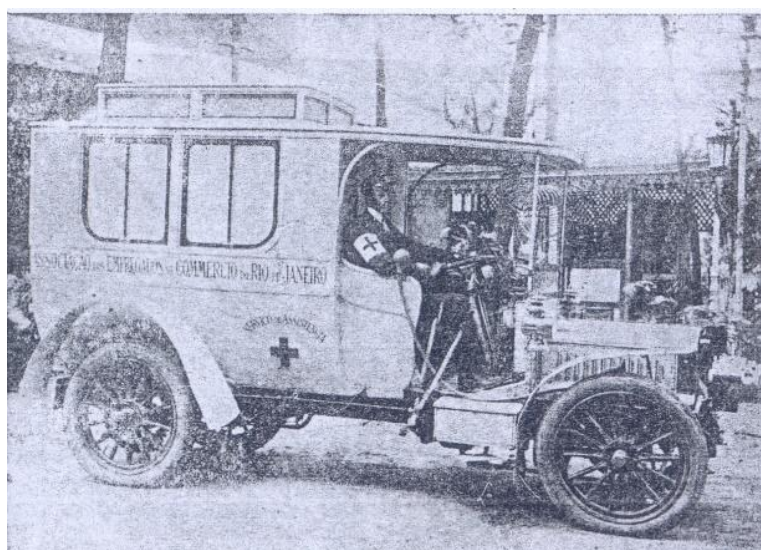


Figure 2: Fax image showing an ambulance. Source: Possollo A, 1907. *Transporte de Doentes: principalmente feridos*. Brazil-Médico journal, 8, 71 – 73. From <http://memoria.bn.br/DocReader/DocReader.aspx?bib=081272x&Pesq=ambulancia&pagfis=2708>

Given the aforementioned, we can infer that, either directly or indirectly, Possollo exerted an influence on emergency care. However, the physician was not mentioned in the documents (especially in *Assistência Pública e Privada no Rio de Janeiro: história e estatística*¹⁹). On the other hand, we cannot deny his experience abroad, recorded in the report and article published on how ambulances were used for emergency services.

Due to the successful results in emergency care with ambulances, it would seem that their implementation was a process welcomed by the population, but it was not. At the beginning, the ambulances employed in emergency services were underused because people did not trust them. For this reason, the government had to implement strategies to revert the situation¹⁹.

Considering this service underuse, the care instances were dramatized in the *Campo de Santana* space, in order to show how they were carried out to the Rio de Janeiro citizens. To this purpose, a number of gardeners simulated health problems for the health service personnel to assist them (Figure 3).



Figure 3: Image tile showing how care was simulated on a public road. Source: Paiva¹⁹ (unpagged edition).

The ambulance was a combustion-engine model bought during Mayor Francisco Pereira Passos' administration (1902-1908)²⁰, as we can see in Figure 2. The image above presents a tile to show some moments of the care simulation for a victim on a public road, comprised by four pictures: arrival of the responders; assistance provided; placing the victim on the stretcher; and entering the ambulance to head for the destination.

We note that Possollo's article mentions how he provided assistance in this situation, hereby citing his own words: 1) Responders' fast arrival at the accident site; 2) A simple dressing and protection care are applied onsite; 3) The injured person is placed on a stretcher that can be put into the vehicle and later on taken to a hospital bed or operating/healing room; its layout should allow for it to be thoroughly cleaned and even disinfected, if necessary; 4) Watching for the injured person during the trip; 5) Traction speed and comfort; and 6) Transferring the patient from the stretcher to the bed or operating/healing room, adopting the same precautions as when placing the patient on the stretcher, administering anesthesia on the stretcher if the patient has to be subjected to a surgery or to prolonged healings^{15:9}.

The images are in gray tones and the space includes trees as a landscape attribute in the background; both the floor and the curb are visible. The number of people in the photographs varies between 14 and 19, including two children. The health service personnel is wearing uniforms with a cap or similar elements, in clear and dark gray tones. What distinguishes them from the other men are their suits with clear shirts and the fact that all of them are wearing different types of hats.

Mostly men, the people in the photographs are wearing clothes that are typical of the fashion in that time. As we can see, they wear suits and hats. This decoding presents traits of the influence exerted by the *Art Nouveau* French style, which coincides with the *Belle Époque* period in *Distrito Federal*²¹. Therefore, understanding the fashion and the urban transformations, such as incorporating ambulances in the health field, reveals the interconnection between text and context.

It is worth noting that the individuals wearing uniforms and caps or similar elements in the photographs from Figure 3 are health guards, inspectors or delegates. The truth is that they wear different clothes from those of the people watching them in the image.

Specifically in its Article 306, Decree No. 5,156 of March 8th, 1904, stipulated that, when meeting the Assistance Hub General Director and if they deemed it necessary, health delegates and inspectors should attend in their uniforms and, in its Article 310, it compels health guards to use their uniforms in health posts, as is also the case with lower-ranked employees. This refers us to military clothes and their hierarchical representations²².

The male victim in the tile images appears in the center of the photograph or near it; in doing so, this sets the representation as with the leading role in the scene. In addition, we believe that the clothes he wore represent the working class.

Placing the victim in the center of the iconographic text or near it ratifies the importance of the Centrality Law. Among the 15 established, the first one points out that “the elements appearing in the center of the image are more important, or better, than those in the periphery”²³. Therefore, we assert that dramatizing the situation with the protagonist in the center is a strategy to persuade the spectators that the simulated rescue is real.

The visible artifacts are the following ones: stretcher, suitcase and ambulance. Given the volume present in the photo scene, the last element stands out from the natural and external environment, and belongs to the fleet presented in Figure 2. Again, we are assertive in terms of applying the Centrality Law as a persuasion and credibility strategy in favor of urgency care.

It is worth noting that Possollo¹⁸ informed that, along with Mayor Pereira Passos' administration, the Río de Janeiro Trade Association Service commissioned assembling a Parisian model ambulance²⁰.

The vehicle arrived during the 3rd Latin American Scientific Congress. Possollo asserted that it was a coincidence¹⁸, but it was in this event that he presented his experience in transportation of the ill. This makes us doubt about such coincidence, which leads us to believe that he made a strategic stance in his presentation about ambulances. Therefore, we think that he already knew (at the least) that it would arrive around that date.

He describes the ambulance in the manuscript: a vehicle driven by a combustion engine and with a 1.90 m long, 1.35 m wide and 1.48 m high body, two side windows in opaque glass with a vertical opening system and another stationary window at the front. It also had a bi-fold door that can be opened at the back. The vehicle floor and sides were zinc-coated and painted oil-based white. It is noted that shock absorbers in an ambulance are important for the vehicle's ride, as they need to mitigate sudden movements.

As for the ambulance interior, he describes there was space for the stretcher and the wheeled bed, which ran over rails on the vehicle floor, side seats for physicians and nurses to provide urgency care, and furniture. This latter element was used to store sterile gauze, cotton, bandages, saline solution, hemostasis pliers, syringes and other similar supplies, and had inner lighting with an electric lamp.

The setting presented in the dramatization iconographic text was *Campo de Santana*, located in downtown Río de Janeiro, where among other attributes, trees, plants and animals at large are characteristic of a garden. It was also an important space for *Distrito Federal* when the public restrooms were installed as a sign of modernity during the Pereira Passos administration²⁴. Consequently, due to various Public Health problems, this was used as a sociocultural visibility element.

Dramatizing the assistance provided in public roads and leaving a photographic record are clues that indicate being in favor of changing the care culture. This is because it considers the behaviors, knowledge, circumstances, beliefs, values and feelings associated with the need process that offers satisfaction to human beings, either individually or in groups²⁵. Therefore, when we articulate personal attributes, landscape and strategic actions, we infer credibility in the new directions to address urgency situations.

World War I exploded in 1914 and Brazil took part in it since 1917. At that time, the Brazilian Red Cross (with its central body in Río de Janeiro) created the Voluntary Nurses course (1914), followed by the Professional Nurses one. In order to join them, the Practical Nurses School was created (1916). The Botafogo Polyclinic Nurses course was created that same year. These academic programs were devised thinking about the international conflict^{26;27}.

Even during the war period, it was considered that, to respond to emergencies, it was necessary to have well-prepared personnel, and the context was favorable for such investment. Therefore, we find a clue in the Practical Course for Nurses and Stretcher-bearers – Graduated nurses at 1917 graduation poster (Figure 4).



Figure 4: Nurses and Stretcher-bearers graduation poster – State Military Brigade (1907). Source: Poster corresponding to the first graduated class from the course for Nurses and Stretcher-bearers run by the Military Brigade in the state of Rio Grande do Sul. From: <https://www.brigadamilitar.rs.gov.br/historia>

Figure 4 comes from the Brazilian Red Cross collection (Rio de Janeiro central body). It corresponds to the graduation of the Practical Course for Nurses and Stretcher-bearers run by the Military Brigade in the state of Rio Grande do Sul, graduates from 1917.

The poster has a group of seven men in the center, six with military uniforms and one wearing formal clothes, with “Course Professors” as title above the image, but without including any names. At the bottom, there is an image of a camp with a flag in a clear background and the Cross symbol in the center. The portraits of all eight graduates in military uniforms can be seen to the sides, with a description of their ranks from soldier to corporal.

We emphasize that, by triangulating the information with *Correio da Manhã*²⁸ and *O Paiz*²⁹ from November 25th, 1917, regarding the enrollments of interested individuals, we found the following requirements: being over 21 years old, literacy in reading and writing, being vaccinated against smallpox and not having any chronic/contagious diseases or physical disabilities, and working on weekdays and in the morning shift; in turn, the professors should be military doctors.

A first, finding a Nurses and Stretcher-bearers graduation poster seemed to make no sense, as we were dealing with the state of Rio Grande do Sul in the Brazilian Red Cross Files, located in Rio de Janeiro. However, this starts to gain logic when we find out that the Brazilian Red Cross president (Thaumaturgo de Azevedo) contacted Afonso Emilio Massot (General Commander of the Military Brigade in the state of Rio Grande do Sul) in September 1918 to request the course topic list and the model certificate³⁰.

When linking the graduation poster to the Brazilian Red Cross president's request to the Military Brigade in the state of Rio Grande do Sul, we found a publication in the *O Povo*³¹ newspaper on the measures that the Military Brigade Commander would take, as well as an assertion by Getúlio dos Santos¹⁰ (director of the Practical Nurses School) indicating that it was necessary to have well-prepared personnel for the care to be provided.

As presented so far, the care culture for assistance in urgency situations was dramatized to convince the population. Considered as an institution focused on war and disasters, the Brazilian Red Cross (central body) was sensitized. This gave rise to several measures for training stretcher-bearers, which is justified during the international conflict period, conferring more robustness to the initiative.

Before 1910, emergency care was implemented by means of animal-draught vehicles, which were gradually replaced by combustion engine vehicles: ambulances. This paradigm change required a reinvention, which implied planning and execution. Therefore, it was necessary to find new theoretical and methodological grounds, through the doing/known practice by means of the care culture movement²⁵.

This movement refers us to the cultural circularity advocated by Carlos Ginzburg. He states that it refers to the circular relationship that is reciprocally established bottom-up and *vice versa*³².

Our reasoning follows the idea that the dramatization in a public space was able to sensitize everyone and not only a given social class, especially when cars were already used in *Distrito Federal*. Therefore, whether driver or pedestrian, any person on public roads or at their home/in a health institution and who needs emergency care can use them.

It is worth recalling that Brazil remained neutral in World War I until 1917. However, president Venceslau Brás formally declared the country as a participant on October 26th, after a number of Brazilian ships were hit by torpedoes in the Mediterranean coast³⁰. Less than thirty days after that, *Correio da Manhã*³³ informed that the Voluntary Nurses course would not cease for the holidays and that enrollment would be open for the Stretcher-bearer course. This confirms the institutional interest in training the personnel.

Within the approach to the World War I period, we know that the first teaching institution in favor of training Nursing professionals was born in 1890 (called Professional Nurses School) and that its first class graduated in 1906. The Rio de Janeiro Maternity Hospital Nursing course (1904) and the Evangelical Hospital Nursing course (1912) were other initiatives; however, we cannot confirm that any professionals were in fact fully trained²⁷.

As we can see, the schools/courses in favor of training nurses were part of the context of incorporating ambulances in emergency care. To this purpose, in its part IV on Emergency assistance for nurses, wounded or not - apparent and actual death: verification means, the manual dating from 1915 and entitled *Lições do Curso Prático para as Damas Enfermeiras Voluntárias*³⁴ teaches what to do in cases such as dyspnea, nervous breakdowns, cramps, pain and sunstroke; these teachings were targeted at Nursing training.

However, before the teachings, the work³⁴ pointed out that emergency assistance was aimed at nurses in general, without mentioning care on public roads; on the other hand, when reading the actions to be taken, we can assert that some of them were applied. Therefore, we infer that, either directly or indirectly, the graduates applied the corresponding care measures for those conditions, especially with nurses' involvement, as indicated in the book entitled *História da Cruz Vermelha Brasileira*³⁵.

Another work, entitled *Livro do Enfermeiro e da Enfermeira: para uso dos que se destinam à profissão de enfermagem e das pessoas que cuidam de doentes* and written by Getúlio dos Santos, military doctor and director of the Practical Nurses School¹⁰, presents teachings that are similar to the aforementioned book in its Chapter XI, called "*Assistência médico-quirúrgica de urgência – muerte real y aparente*"¹⁰.

The difference lies in the author pointing out that, regardless of how good the Public Healthcare Service is, many lives could be saved in traffic accidents before the emergency responders arrive. It also highlights the importance of this type of teachings for any person, especially nurses, who carry the moral and professional duty to have the necessary knowledge to perform such actions.

In none of the documents were we able to identify any direct mention to emergency care in charge of female nurses on public roads using ambulances. This can be due to women's social condition between 1910 and 1920, even with the women's suffrage movement in Brazil led by Bertha Maria Júlia Lutz³⁶ already established. Therefore, they were not recommended.

Although Getúlio dos Santos does not mention emergency care provided by female nurses on public roads, he does highlight the stretcher-bearers' work. They were given instructions on First Aid, as they were the first responders at the site. Thus, they were in charge of transporting the victims/nurses and, according to him, mostly in ambulances, as there were also health trains/planes and other transportation means for this purpose¹⁰.

On the other hand, in the work entitled *Curso de Enfermeiros* by Adolpho Possollo (1920), we find a citation asserting that, in advanced cities, Centralized Public Health had duly trained professional nurses to provide emergency care⁶.

This assertion is due to Possollo's report from 1907 on what he saw in his trip. He reported the following in that document: the service was flawed in Paris, as the vehicles were old, but there was a female nurse to provide care; assistance was better in Berlin than in Paris, as there were several ambulance stations; finally, the service provided in North America was of good quality, from the care offered to the number of ambulances¹⁵.

Electrically driven and with a 2 HP (1.5 KW) engine in the rear axle, the first ambulance was registered in the last year of the 19th century. The city of Chicago was the pioneer, followed by New York in 1900, which was some steps ahead in the care of emergency victims³⁷.

Another major step forward was recorded in Canada in 1905, when the vehicles began to run on gasoline and were dubbed *Palliser Ambulance* in homage to Captain John Palliser from the Canadian Army for his deeds. It had three wheels (one at the front and two at the back), was specifically designed for war conflicts and was inspired by a tractor³⁷. This led the British to request a motorized ambulance; however, unlike the Canadians, they used a two-story bus as a reference³⁸.

In the race for refinement, United States made an innovation with an ambulance that had a 32 HP (24 kW) combustion engine and 4 cylinders, with tires, body with electric lights, hanging bed, two seats for companions and cabinets at the sides³⁹.

The work entitled *Dama Enfermera – Cruz Roja Española* was published in 1916. In short, it presented the history of the Red Cross, as well as its inclusion in Spain (1898). Some years later, in 1909, the Female Nurses School belonging to the San Sebastian Red Cross was created in the Moroccan War context (1909-1919). This happened when the Rif tribes charged against the Spanish workers in the Rif iron mines. During the conflict, it was necessary to assist the wounded and duly trained female nurses provided the care required⁴⁰.

The history of the Spanish Red Cross is interconnected to the courses targeted at training nurses. To this purpose, in the work entitled *El Libro de La Dama Enfermera de La Cruz Roja* we find a photographic record from 1910 showing an ambulance parked in *Plaza Okendo* in San Sebastian, in addition to more information on female nurses' work in transporting the wounded, in teams called Health Brigades⁴⁰.

The French Red Cross Nursing Training School was created in France in 1876; however, the first class only graduated in 1923. Even so, almost all ambulances, trams, urban trucks and phone operations were operated by women until 1916⁴¹.

As can be seen, we encompassed Chicago, New York, Canada, England, Spain and France in our research to study the steps in the development of motorized ambulances and the incorporation of female nurses linked to emergency care. Some of you might be asking yourselves the following question by now: What type of care did female nurses provide?

This will be recorded as one of the research gaps. However, we must go back to Possollo's report¹⁵ and consider his trip to Europe and North America. In the brief presentation of international text materials, we believe to have relatively and proportionally displayed what was reported before 1905, year when Adolpho Possollo arrived at Brazil, as well as the subsequent effects of temporality that are not included for obvious reasons.

Therefore, mainly in emergency care by means of motorized ambulances, the care culture movement went through several strategies in *Distrito Federal*, from its presentation in a scientific event, the dramatization, the Stretcher-bearer course and intellectual provocation, all targeted at Nursing teaching. This drove care culturalization. In fact, modernity was incipiently showing its signs.

Study limitations

Suspending the research does not mean that it is finished, quite the opposite. As we were able to identify in our readings, the Stretcher-bearer course should be researched more in-depth; in addition, it is indispensable to conduct studies about the agents from the Public Assistance Central Service, write a biography on Adolpho Possollo and his connections and determine female nurses' role and what they did and how in ambulances.

FINAL CONSIDERATIONS

Despite the existing gaps, the objective was reached: to analytically describe the strategies undertaken by government officers and Nursing teaching promoters to incorporate ambulances into the emergency care culture. To this purpose, some ideas were presented in the discussion; however, we will focus on the synthesis.

Motorized ambulances represent modernity, as they used to be animal-draught vehicles or similar. This encompassed several aspects, from Public Health policies to training duly qualified personnel to work in emergencies. In fact, the care culture could not be left aside from the process to write the narrative, especially in secular Nursing through the action implied by the verb "care for".

The contributions the research makes to the History of Nursing and Care field are no less important; for example: we can understand the past in the present to project the future and women's sociocultural conditions in *Distrito Federal* if we differentiate them from their French or English counterparts that worked directly on ambulances. This might be related to their training and is definitely linked to each country's mentality, which opens another research window.

Finally, we should remember that Rio de Janeiro systematized Pre-hospital Care when hiring physicians and nurses through public service selection exams in 1986, which once again shows that it was a pioneer and *avant-garde* in that sense as we identified in this paper, given that its Fire Brigade has worked in emergencies since the 19th century.

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Author's contributions

Conceptualization, C.L. and F.P.; methodology, F.P.; formal analysis, C.L. and F.P.; investigation, C.L.; resources, F.P.; data curation, C.L.; manuscript writing, C.L. and F.P.; review and editing, F.P.; supervision, F.P.; project administration, F.P.; financing acquisition, F.P. All authors read and agreed with the published version of the manuscript.

Use of artificial intelligence tools

Authors declare that no artificial intelligence tools were used in the composition of the manuscript "*Nursing teaching strategies to incorporate ambulances in emergencies (1907-1928)*".